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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,383	09/05/2003	Heinrich Schenk	1406/164	9592

25297 7590 04/04/2007  
JENKINS, WILSON, TAYLOR & HUNT, P. A.  
3100 TOWER BLVD  
SUITE 1200  
DURHAM, NC 27707

EXAMINER
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PATHAK, SUDHANSHU C

ART UNIT	PAPER NUMBER
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2611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/04/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/656,383

Applicant(s)

SCHENK, HEINRICH

Examiner

Sudhanshu C. Pathak

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on Sept. 5<sup>th</sup>, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 11, 14 and 23 is/are rejected.
- 7) ☒ Claim(s) 2-10, 12, 13, 15-22, 24 and 25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Sept. 5<sup>th</sup>, 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Claims 1-25 are pending in the application.

(Claims referred to are as disclosed in the preliminary amendment date Sept. 5<sup>th</sup>, 2003).

### *Specification*

2. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 11, 14 & 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Schenk et al. (6,647,076).

In regards to Claim 1, Schenk discloses a circuit arrangement for compensating for disturbances in a signal generated by means of discrete multitone modulation (DMT), the signal generated by means of discrete multitone modulation exhibiting in the frequency domain a multiplicity of carrier frequencies which are used for transmitting data via a transmission channel, and each carrier frequency exhibiting a signal vector (Claim 1, lines 1-5 & Column 1, lines 19-26) comprising: a multiplicity of first adder circuits, the multiplicity of first adder circuits being supplied with a first error signal vector and the multiplicity of first adder circuits adding the first error signal vector to at least one first signal vector in order to generate an error-corrected first signal vector (Fig. 1, elements 12-13,  $a_n$ ,  $b_n$ ,  $a_n^*$ ,  $b_n^*$ ,  $a_n'^*$ ,  $b_n'^*$ ); and a multiplicity of first multiplier circuits which precede the multiplicity of first adder circuits and multiply the first error signal vector by adjustable coefficients wherein the first error signal vector is a signal vector of a carrier frequency which is not used for transmitting data via the transmission channel (Fig. 1, elements 8-11).

In regards to Claim 11, Schenk discloses a circuit arrangement for compensating for disturbances in a signal generated by means of discrete multitone modulation (DMT), the signal generated by means of discrete multitone modulation exhibiting in the frequency domain a multiplicity of carrier frequencies which are used for transmitting data via a transmission channel, and each carrier frequency exhibiting a signal vector (Claim 1, lines 1-5 & Column 1, lines 19-26), comprising: decision circuits which are in each case supplied with a reference signal vector and which map the respective reference signal vector into a respective value-discrete reference

signal vector (Fig. 1, elements 40, 4n); subtracting circuits for forming a respective error signal vector which subtract the respective reference signal vector and the respective value-discrete reference signal vector from one another (Fig. 1, elements 6-7); groups of first adder circuits, each group of first adder circuits in each case being supplied with an error signal vector and the groups of first adder circuits adding the respective error signal vector to at least one signal vector in order to generate a progressively error-corrected signal vector (Fig. 1, elements 12-13); and groups of first multiplier circuits which in each case precede a group of first adder circuits and multiply the respective error signal vector by adjustable coefficients (Fig. 1, elements 8-11).

In regards to Claim 14, Schenk discloses a method for compensating for disturbances in a signal generated by means of discrete multitone modulation (DMT), the signal generated by means of discrete multitone modulation exhibiting in the frequency domain a multiplicity of carrier frequencies which are used for transmitting data via a transmission channel, and each carrier frequency exhibiting a signal vector (Claim 1, lines 1-5 & Column 1, lines 19-26), comprising the following steps: multiplying at least one error signal vector by adjustable coefficients (Fig. 1, elements 8-11); adding the at least one error signal vector multiplied by the adjustable coefficients to at least one signal vector in order to generate an error-corrected signal vector, wherein the at least one error signal vector is a signal vector of a carrier frequency which is not used for transmitting data via the transmission channel (Fig. 1, elements 12-13).

In regards to Claim 23, Schenk discloses a method for compensating for disturbances in a signal generated by means of discrete multitone modulation (DMT), the signal generated by means of discrete multitone modulation exhibiting in the frequency domain a multiplicity of carrier frequencies which are used for transmitting data via a transmission channel, and each carrier frequency exhibiting a signal vector (Claim 1, lines 1-5 & Column 1, lines 19-26), comprising the following steps: mapping a respective reference signal vector into a respective value-discrete reference signal vector (Fig. 1, elements 40, 4n); subtracting the respective reference signal vector and the respective value-discrete reference signal vector from one another in order to form a respective error signal vector (Fig. 1, elements 6-7); multiplying the respective error signal vector by adjustable coefficients (Fig. 1, elements 8-11); and adding the respective error signal vector multiplied by the adjustable coefficients to at least one signal vector in order to generate a progressively error-corrected signal vector (Fig. 1, elements 12-13).

#### ***Allowable Subject Matter***

5. Claims 2-10, 12-13, 15-22 & 24-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, it is recommended to the applicant to amend all the claims so as to be patentable over the cited prior art of record. A detailed list of

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pertinent references is included with this Office Action (See Attached "Notice of References Cited" (PTO-892)).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhanshu C. Pathak whose telephone number is (571)-272-3038. The examiner can normally be reached on M-F: 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571)-272-3042.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Sudhanshu C. Pathak  
Examiner  
Art Unit 2611



CHIEH M. FAN  
SUPERVISORY PATENT EXAMINER